

Remarks of Catherine J.K. Sandoval, Commissioner, California Public Utilities Commission. Thanks for the Opportunity to Serve as a Commissioner of the California Public Utilities Commission , December 15, 2016

I want to thank all of my colleagues for our service together as Commissioners of the California Public Utilities Commission. I appreciate the honor to serve as a Commissioner of the California Public Utilities Commission since 2011 and thank Governor Jerry Brown for this great opportunity. When I was in high school California had a young, hip, visionary Governor named Jerry Brown. California had the wisdom to elect Governor Brown again so we are fortunate that California has since 2011 had an experienced, hip, visionary Governor named Jerry Brown.

I also have the honor of being a tenured professor at Santa Clara University School of Law. I will be returning in January 2017 to teach and research Communications and Administrative Law, Antitrust Law, and Contracts law, and plan to teach a seminar on the Water/Energy/Communications Nexus. As my term as a CPUC Commissioner comes to an end I am particularly grateful for the opportunity to vote today on the Call Completion item and the Water/Energy/Communications Nexus Decision, and to bring forward many proposals to this body. I appreciate our dialogue and believe these Decisions will improve public safety and advance our understanding of communications, water, and energy issues.

As I think about our work and accomplishments at the CPUC over these past six years, we have addressed many issues that reflect the need for “Old School” basic services, while also fostering the creation of new industries and new means to address water, energy, communications, and transportation needs. We’ve navigated a range of issues and proceedings through our adherence to the law and principles as embodied in the directive in California Public Utilities Code 451 to ensure that utilities provide safe, reliable service at just and reasonable rates with adequate facilities.

During the past six years we have worked with people and places in Californian that are still struggling to catch up to the 19th Century, not even the 20th Century, as today they don’t have electricity or telephone service. At the end of the 19th Century some people in Los Angeles and San Francisco had electricity and telephone service. The rural electrification administration and universal service policies for telephone service expanded these services to much of rural, suburban, and urban America by the mid-twentieth century. Yet, there are people and communities in California, particularly in rural areas and many tribal regions and reservations in California that still today lack electric or telephone service. The rural electrification administration brought electricity and telephone service to the farmer’s house, but not the farmer’s field. This results today in the inability to use “Apps” and other communications technologies to manage water and energy use on many farm fields, and continued reliance on diesel generators to run water pumps and other field equipment. We have worked to close those gaps by fostering the building of infrastructure in rural areas. California received \$660 million in Connect America Funds in 2015, more than any other state, reflecting the fact that ninety-five percent of California’s landmass is rural. While California has three of the top ten largest cities in America, Los Angeles, San Diego, and San Jose, it also has many small communities, some of whom lack electricity, telephone, or clean water service.

One of our greatest accomplishments was to work together with the Yurok Tribe to bring electricity to parts of the eastern region of the reservation in June 2013, and first telephone service to that area of the Yurok reservation in April 2014. I appreciated the opportunity to consult and coordinate with the Yurok Tribe, and the support of CPUC Commissioner Florio, my colleagues on the Commission, then Communications Division Director, Ryan Dulin, Dr. Bill Johnston, my Telecommunications Advisor, and so many people at the CPUC, as well as the work and cooperation of PG&E, and Verizon and particularly its Western Region Vice-President Tim McCallion, to complete these projects and lay the foundation for their expansion. The CPUC awarded a grant in 2006 for the construction of telephone and electric service in the eastern portion of the Yurok Reservation near Weitchpec, California. Construction of the communications project was long-delayed by the lack of electricity necessary for the operation of the telecommunications network, and well as by other issues. Once the electric project was energized in June 2013, and after many calls and inquiries about the status of the telecommunications project, I informed Tim McCallion, Verizon's Western Region CEO, that I would call him from the Yurok reservation at 2:00 p.m. on May 4, 2014. I was proud that the telephone service was up and running and I was able to make a call when I visited the Yurok reservation that day.

I had the honor of visiting with the Tynor family which had just received telephone service in the Yurok reservation through this project. Walking into their house they proudly showed off their telephone, and they were so proud of their refrigerator, microwave, and computer. They couldn't have those appliances before because they didn't have standard electricity. Some households on the reservation were served by a small hydro facility that served five families. The small hydro system produced such spiky power that microwaves were prohibited as the quick power draw could overwhelm the small system's capability, and the power generated didn't always stay in the narrow frequency band required for modern electric systems and equipment. The Tynors were working to repair a computer that sat on the kitchen counter with its parts hanging out of the exposed back as a power spike had blown out the motherboard. With the modern electric system extended to their house they are able to safely and reliably operate a computer, microwave, and a refrigerator. Since they now have a telephone, they can connect that computer to the Internet. Mr. Tynor told me proudly that his kids were now able to use the Internet for their homework since they had a telephone and now had dial-up! Soon they will have broadband as the Yurok Tribe and nearby Karuk Tribe are working to build broadband Internet for the region with the support of a California Advanced Services Fund (CASF) grant from the CPUC.

Mr. Tynor's father moved in with the family since they now had a telephone. His father is completely blind so they didn't feel comfortable with his dad moving there until they had a telephone and knew they could get services and help when they needed it. His dad uses the telephone every day to call a service called "Tell me" that reads him the news. Mr. Tynor shared with me that when he was building his house he fell off the roof and broke his hip, but they didn't have a telephone, and no one in the area had a phone. Luckily his wife was home and they had gas in the truck, and she was able to literally push him into the truck and then she drove for help. Since there was no phone anywhere in that part of the reservation they had to drive for 45 minutes to get to a place with telephone service so they could call 9-1-1. Then they had to wait another 45 minutes for emergency help to arrive. Luckily he survived and he's fine today. I met many other people who had relatives who died on the reservation for lack of a phone.

A telephone can literally be the difference between life and death, danger and safety, hopelessness and opportunity, isolation and connection to each other and the world.

When we made the call that day to Tim McCallion from Verizon from Mr. Tynor's house he expressed tremendous gratitude to Verizon, the CPUC, and the Yurok Tribe for our collaborative work to bring phone service to his neighborhood. I remember thinking as he was on the phone that Mr. Tynor could have been bitter about the time when he and others didn't have a phone to call for emergency help. Instead, he emphasized the difference the telephone made to his family and public safety. He said "Thank you Mr. McCallion. I want to thank you, Verizon, the CPUC, and the Yurok Tribe, and everyone involved in making it possible for my family and my community to have a telephone." Mr. Tynor explained that he had been blessed to have a telephone for three weeks, and that because he had a phone he had the opportunity to call 9-1-1 when he saw a brush fire from his window. He called the Yurok Tribal fire department and they came and were able to put out the brush fire. They kept a brush fire from becoming a wildfire because he had a phone. Mr. Tynor emphasized "We protected our reservation, and our people because I had a telephone." That phone call in May 2014 happened because of our collegial work and our collaboration with the community to make sure that the company performed on a grant the CPUC awarded to the utility in 2006.

Soon the Yurok tribe and the people of that northern California region will have broadband services. The CPUC awarded a CASF grant to the Yurok and Karuk tribes to construct the Klamath River Broadband Initiative (KRBBI) broadband project. That project will strengthen Internet service for the entire region. That project would not have been possible without the electric service funded in 2006 and energized in 2013 as communications networks need power. Extension of broadband depends on the extension of electricity access now underway on the Yurok reservation, and on the ability to bring power to homes and facilities.

Today we approved the CASF grant to Siskiyou Telephone that will support fiber-based Internet service between Happy Camp and Somes Bar, California. This project will create new opportunities for communications backhaul that will benefit the entire region including Orleans, California which now depends on microwave to carry the calls out of the region. As we learned in the Verizon-Frontier proceeding, Orleans suffers from many call failures and intermittent service, sometimes causing the entire town to lose dial tone or the ability to call 9-1-1 for hours or days at a time.

Microwave has been an important connectivity bridge. Yet as we have seen in regions ranging from the Karuk Tribal lands in Orleans, California to Kernville, California, microwave does not have adequate capacity to carry large amounts of data necessary for health, government, education, and other fields. Microwave can also suffer from rain fade or "thermal ducting" that limits transmission of data and call signals as cold and warm air meet in the fog of the forest. The fiber link we approved today solves those capacity and transmission reliability problems in the Siskiyou and Humboldt County areas. It moves the region closer to creating a "self-healing" ring that can reroute calls and data if there is a failure, providing a resilient and reliable network. Each CASF project we have approved creates a link that will strengthen the region and our state as we increase reliability of telephone call and data transmission vital to support economic development and public safety.

CASF projects such as the Siskiyou and KRBBI CASF projects, Digital 395, and other CASF projects and proposals can also create the backhaul facilities that make it possible to place a cell phone tower in that region, increasing connectivity for residents, visitors, and emergency services providers. During large fires such as the Rim Fire and Soberanes fire, more than 5,000 fire fighters mass in regions that normally suffer poor to limited cell phone service. As carriers work to bring a cell on wheels (COW) or cell on light truck (COLT) to the fire camp to enable modern information-based firefighting methods, carriers need to connect the COW or CoLT to backhaul facilities at a central office or conduit. They may also need to enter into agreements with other carriers to hand off traffic at facilities or meet points to be able to transmit calls, text, or enable Internet access. Today this process often takes a week to ten or fourteen days. During that time the fire rages and fire-fighting is done old-school, with pick axes, handheld radios if they work in the region, and cell phone brigades who drive out of the fire zone to areas where there is internet access to upload information about the fire and download fire maps and plans, and call for resources and backup. The CASF projects we approve will create the backhaul that makes it easier for a cell phone tower to connect, and for fire fighters to have the capacity and connections they need to swiftly use information in their fire-fighting arsenal. These networks are also key for the management of energy and water. Interconnection of energy generation and water to telecommunications facilities and services is vital to the operation and management of these services and the stewardship of our resources.

I had the opportunity to visit the Yurok reservation in September 2016 with the CPUC's Low Income Oversight Board. We met in a consultation with the tribe and saw the work they are doing to extend electrical service through a federal grant from the Rural Utility Service. Today the Elementary School on the Yurok reservation does not have electricity and runs on diesel generators, as I showed you through cell phone video and audio footage at the October Commission meeting. I am pleased that researchers at U.C. Berkeley are planning to use their own research funds to do air testing research at the Yurok reservation to analyze the effects of diesel and wood use on health and the environment. This testing will create a scientific baseline of the air quality before and after the extension of electric service and the transition from diesel and wood to electricity. Even after the electric line is extended along the main road, it will take time for all of the households and the school to access the electric line. Interior wiring upgrades will be needed, and the cost of extending the line from the road to the building must be met. Increasing understanding of the effects of lack of access to electricity on health, the environment, education, and the economy will spur those connections.

I tell you these stories because there are Californians who desperately need the work and leadership of this Commission. Many Californians need even the most basic services, and this Commission has the opportunity to bring those services to Californians who need them. I am very happy to have been a part of extending utility access, and ensuring that Californians have high-quality, safe, reliable, and affordable utility services. I am proud to have worked with and to count among my friends members of the Yurok Tribe, and the many people who supported them in getting those services, and continue to collaborate with the tribe. I am honored to have friends in many communities and Tribes in California, and to have worked with Traci Stanhoff, President of the American Indian Chamber of Commerce of California to hold three Native American Infrastructure Summits.

In addition to the work to bring basic services to Californians, we've collaborated to build 21st century infrastructure to help address some of the biggest issues faced by our state and nation. We expanded the California Lifeline program in January 2014 to include mobile phone, text, and data service, along with landline service. More than two million Californians are enrolled in California Lifeline. More than 500,000 Californians still choose landline Lifeline service for their communications needs, while more than 1.5 million are enrolled in our mobile Lifeline service. We ensured that each applicant is verified for eligibility, safeguarding program integrity and directing help where it is most needed. Thanks to my colleagues and the work of the Communications Division, we transformed the Lifeline enrollment process from a paper-based process which often took two to three months, to an internet-based process that is usually completed in two days. Along with the federal Lifeline program, California Lifeline has created a means for low-income Californians to call 9-1-1 if necessary, to reach out to employers, to stay in touch with their families, and to participate in our economy and polity. Through the California Alternative Rates for Energy (CARE) and Energy Savings Assistance Program (ESA), we directed the energy utilities to work with Lifeline providers to leverage the platform Lifeline creates to provide information and access about energy efficiency, energy bill management, and other energy programs. This synergy leverages our investment in energy and communications programs to create new opportunities for Californians and the management of California's energy resources.

Our work has reduced greenhouse gas (GHG) emissions, smog, and pollution. We shifted more energy generation and consumption to renewables, while providing a resilient and reliable energy mix. We have proven that renewables are not just a side bucket or a specialty category, but are part of the main energy bucket, and a key component of California's energy generation and resources.

We have also brought about a transition in the use of distributed energy resources. Through communications-enabled energy resources we are managing energy in new cost-effective ways to promote grid stability, avoid blackouts, and harness available resources. In June 2016 the ability to use wireless signals to call on air conditioners in the Los Angeles area to cycle down and use less energy saved more than 300 megawatts of energy, the equivalent of a peaker plant. In the CARE and ESA Decision we adopted in November, we're bringing a bigger range of energy efficiency measures to low-income Californians, and facilitating their participation in demand response programs. These measures include steps that address the water-energy nexus, such as saving natural gas and water by repairing leaky hot water heater systems. By accelerating CARE/ESA measures in the Los Angeles region, we helped stave off the potential for blackouts by reducing electricity demand, and thus the need for natural gas, a key fuel for electricity. Installation of energy efficiency measures helped forestall load growth and the need to build new transmission lines or power plants in some regions of California.

The CPUC's Decision this summer to adopt a new process to speed interconnection of distributed energy resources and storage to the electric grid will promote cost-efficiencies and the development of appropriate generation resources. It was a pleasure to work with the CPUC staff to author the Interconnection Decision which builds on the work of the Smart Inverter Working Group to harness the potential of communications devices to provide grid services and enable energy resource safety, reliability, and management. Special thanks to my Legal and Water Advisor, Jamie Ormond, and to my Energy and Safety Advisor, Michael Colvin, for their help in authoring that Alternate.

Communications networks and services are vital to connect both centralized and distributed energy generation, as communications make energy systems visible, controllable, and dispatchable. Thanks for your approval today of the Water/Energy/Communications Nexus Decision, D. 16-12-047, which refers analysis of the role of data networks for energy systems to the Distributed Resources Planning proceeding. That Decision also initiates workshops to explore alternatives for increasing access to communications services during times of emergency such as wildfire when communications systems today too often fail or are simply not available in California's mountainous regions prone to high fire risk. It also convenes a workshop to develop a template to report on communications outages that affect water and energy facilities and systems.

Through the Water/Energy Nexus proceeding we've enabled new actions to address the water, energy, telecommunications nexus. We've encouraged people to focus on the connection between these facilities and services and not the silos in which they've been kept. We adopted a Water/Energy Nexus cost calculator that takes into account energy usage in California's various regions and differences in energy intensity experienced by water investor-owned utilities (IOUs) under this Commission's jurisdiction. Today's Water/Energy Nexus Decision initiates the development of Water/Energy Nexus Cost Calculator 2.0 to account for the role of natural gas in the water/energy nexus, and to ease the calculation of the reduction in GHGs from measures that address the Water/Energy Nexus.

Earlier this year we adopted pilots to authorize partnerships between Water and Energy IOUs to "piggyback" on the automated meter reading collector networks we invested in for energy customers. These pilots will save water and the embedded energy in water by allowing Water IOUs to transition more quickly and cost-effectively to Advanced Metering Infrastructure (AMI) to detect leaks and protect water quality. The Water-Energy "piggybacking pilots" create regulatory and cost alignment; the Decision allows energy IOUs to use the Water-Energy Nexus cost calculator to get credit for saving embedded energy in water conserved through use of AMI to identify leaks and enable prompt action. Our Decision aligned regulatory programs, cost savings, and water and energy conservation goals.

In November 2016 we adopted the Water-Energy Nexus "Matinee Energy pricing" pilots. We authorized Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E), to combine both Time of Use (TOU) and Demand Response (DR) concepts to create incentives for commercial, industrial, and agricultural customers to switch their energy use to mid-day when renewable and low-water using energy are abundant. Movie theaters have long used matinee prices to attract viewers at mid-day when seats would otherwise be empty. This Decision authorizes "energy matinee" prices to attract commercial, industrial, and agricultural customers to mid-day energy use at times when energy is abundant. Today, energy prices for business customers are highest in the afternoon, discouraging afternoon energy consumption. This pricing theory reflects the afternoon energy peak more characteristic of the "Mad Men" era of the early 1960's than the energy resource mix and water resource constraints we now face. As peak energy consumption has shifted to late afternoon or early evening, we need to adjust our pricing mechanisms so that we encourage energy consumption when it is abundant. Today, peak energy consumption is often supplied by energy that uses larger amounts of water for cooling than renewable energy that may go underutilized during the day when prices are high for commercial, industrial, or agricultural energy use. Energy Matinee pricing programs will also save

water embedded in energy. Many types of energy generators use large amounts of water for cooling, 30,000 gallons of water a minute or more, while many renewables use no water in their generation process. Thanks Commissioners for your support to align energy pricing with energy supply, and to use demand side programs to help balance use and management of energy and water resources.

Through the Water Balanced Rates Order Instituting Rulemaking (OIR) we approved on December 1, 2016, we adopted principles for water ratemaking that stress accuracy and flexibility, and reflect California's water landscape increasingly characterized by drought, despite today's rainy day. We promote more accurate and transparent water rates by improving the methodology for forecasting water consumption. Together we have faced extreme drought over the past five years. California must prepare to make water conservation a way of life as Governor Brown directed in his Executive Order. By authorizing the transition to AMI in the Balanced Rates OIR, we enable prompt consideration of applications to adopt automated meter reading that can quickly detect leaks. Today, Americans can easily track every step and heartbeat through a device on their wrist. It is time to move to water meters that can more quickly transmit information to help customers and utilities detect and stop leaks.

In our resolutions to address the drought state of emergency, we asked Water IOUs to take bold steps to deal with the drought. This included a directive to mitigate consumption by outlier users, very high water users whose use is so high that it skews the average. Regulating for the outlier is a methodology I've championed in the water, energy, and communications sector. Outlier users, or outlier performance issues such as circuits that demonstrate a far higher failure rate than the average, need different regulatory approaches and incentives that are not captured by regulating for the average. Outliers may be buried by reliance on averages, yet addressing outliers may be key to addressing resource and system needs, identifying and managing issues and problems.

I also appreciate your support for the Call Completion Decision adopted today. California law contains a duty for carriers to carry and complete calls. This Decision identified key factors affecting call completion and call initiation failures including software, service, network design and route diversity issues that affect service resiliency, and maintenance issues that contribute to call failures. Over the past few years outages left hundreds, thousands, even tens of thousands of Californians at a time unable to initiate a phone call or to call 9-1-1 for hours or days at a time. This proceeding initiates collaborations with local, tribal, and state Offices of Emergency Services (OES), and will make it easier for local OES offices to reach carriers when they have an emergency. It initiates the gathering of data on outages and notice to Cal OES's warning center about outages. Thanks to the parties and members of the public who participated in the Call Completion proceeding, and for their engagement in the CPUC's important work to protect public safety, and ensure safe and reliable service.

As we deal with the many proceedings before this Commission we are guided by certain unwavering principles rooted in the California Constitution and the Public Utilities Code. Section 451 of the California Public Utilities Code requires the CPUC and the utilities we regulate to ensure safe, reliable service at just and reasonable rates with adequate facilities. As we have worked on the many proceedings before this Commission in a range of energy, water, communications, and transportation industries, we are guided by these principles that serve as our North Star. When considering a proposed

Decision or resolution I always ask myself whether the proposal is consistent with those principles, and how we best achieve the vision of high-quality service for all Californians embodied in those principles.

Together we've also embraced the principles of promoting innovation and investment. Colleagues we have promoted tremendous innovation, first in the nation, first in the world in some cases, and investment of hundreds of billions of dollars. For example, our investment in smart meters pays dividends by enabling grid analysis and planning for a reliable grid and a cleaner energy future. Smart meters are an example of the communications-energy nexus that provides valuable information to speed repairs, inform customers about outage repair times, target energy efficiency measures, help customers manage their energy and their bills, and assist our energy resource planning.

We have increased and transformed public engagement at the Commission. Thanks to my Chief of Staff, Ditas Katague, who has been my partner in this initiative to improve the CPUC's interaction with and responsiveness to the public. In my submission to the California Senate to prepare for the confirmation process I identified as one of my priorities improving public engagement with the CPUC. We wanted to move away from the model of providing a microphone and two minutes each in San Francisco for public comment to a model where the public was highly engaged with CPUC proceedings and felt that we listened to them. As we meet with communities in diverse regions of California we learn more about the perspectives and concerns of Californians, and enable more informed and effective policy-making. Thanks to Terrie Prosper, the CPUC's Public Advisor, Allison Brown, and to all of the CPUC Public Advisor representatives who greet the public so warmly at our PPHs. Thanks to the CPUC Administrative Assistants, Contracting office, and Executive Branch, who make these PPHs and field Workshops feasible. Many thanks to the CPUC's court reporters who create accurate and helpful transcripts of our PPHs, Workshops, and Closing arguments.

As a native of Los Angeles and a resident of the Silicon Valley, I have learned a great deal from listening to and learning from Californians in a range of urban and rural settings. Being there increased my understanding of the experience of people and communities, ranging from those who have no electricity or telephone access, or struggle to get clean water, to those who have a range of technology options. When I attended the Call Completion and Lifeline Proceeding PPHs in Happy Camp, California this July, I was struck that everyone who was fishing was also preparing for winter by canning fish. They were driven to prepare for winter because that region commonly has power outages that last for three to five days. They cannot depend on refrigeration or electricity during those outages. This Commission has the power and duty to address these issues.

Through the CPUC Modernization Committee we have clarified that CPUC Decisions may consider public comment as part of the record, and our Decisions are informed and enriched by doing so. More than 50 years ago the decisions in the *United Church of Christ, Office of Communications v. Federal Communications Commission* cases established the right of the public to participate in FCC rulemakings. State Commissions such as the CPUC have been leaders in conducting public hearings and enabling public participation. We harness and honor that participation by considering it in our Decision-making process and reflecting on public and party comment in our Decisions.

We have made tremendous strides in enabling both public engagement and CPUC engagement. Thank you to CPUC General Counsel Arocles Aguilar and to Chief Administrative Law Judge Karen Clopton for your collaborative work to clarify that a CPUC Commissioner or Decision-maker's attendance at and participation in a CPUC Workshop that is noticed on the daily calendar does not invoke the *ex parte* rules. This simple change opened the door to fuller engagement of CPUC decision-makers in the public workshops and meetings the CPUC hosts. This process contributes to the development and analysis of the record and to more informed decision-making.

As the CPUC carries on its work, it is important that we engage with each other at the CPUC and listen to each other. When Governor Brown appointed me he emphasized that my work as a law professor prepared me well to listen and ask good questions. He appropriately put the listening first. Listen to each other, be kind to each other, and treat each other well in your work at the CPUC.

We need to hold ourselves and the utilities we regulate accountable to the CPUC rules and California law, including respect for the *ex parte* and ethics rules. I am pleased to have worked with my colleagues, the Legal and Administrative Law Divisions, to author a Decision unanimously approved last year to create accountability for *ex parte* rule violations. I was proud that Michael Strumwasser's report on the CPUC recognized my leadership in holding all party meetings as an example of transparency and good government. Thanks to everyone at the CPUC who helped me to convene all party meetings, and to the parties and Commissioners, and public who attended all parties and closing arguments and used this opportunity for open dialogue. I found the dynamic of all-parties, the ability for parties to respond to each other about a set of key questions we posed about the proceeding, to be a very helpful tool in the decision-making process.

In closing, I would like to offer thanks to a few individuals.

First, thanks to Governor Brown for this tremendous opportunity and for your visionary leadership. California and our nation and world benefit from your commitment to equity, opportunity, and improving our environment.

Thanks for this opportunity to collaborate with sister state agencies. I appreciate the opportunity to have served for the past two years as the Co-Chair of the Water Energy Team of the Climate Action Team (the WET CAT), a working group established by AB 32 to reduce GHG emissions. I appreciate the opportunity to work with the Governor's Office, the CEC, the State Water Resources Control Board, the Department of Water Resources, the Department of Food and Agriculture, CAISO and many others to successfully weather big challenges during the drought and in response to energy issues.

Thanks to my husband Steve Smith, my partner in life, who has been tremendously supportive of my service at the CPUC. Steve was here at my very first Commission meeting and at a Commission meeting in April 2011 on another rainy day like today. Steve, throughout my term at the CPUC you supported me when I had to work late and on the weekend, and to travel to places in California without cell phone or telephone service. You always hugged me and allowed me to be who I am. Thank you for supporting me and always standing with me to make sure that people have the high-quality service they deserve.

To my Chief of Staff Ditas Katague who has worked with me at the CPUC since 2011, thank you. Ditas and I previously worked together at the State of California's Business, Transportation, and Housing Agency. I knew the special magic that you could create through your analytical abilities and commitment to public engagement. Your experience with the census and project management gives you a range of perspectives and tools that have helped the CPUC be more effective. You have been my partner and my counsel. We would not have been able to accomplish the many Decisions we authored and offered input and edits to other Decisions without your work, diplomacy, and initiative. Thank you so much for what you do and for always being there for me.

To my Telecom Advisor Dr. Bill Johnston who has also worked in my Office since 2011, his advice has always been helpful, consequential, and moved the ball forward. You have been a tremendous partner, driven many road miles with me, met and photographed many people and utility poles, and done many typewriter miles with me as we drafted and edited decisions and rulings. We would not have had the successes in Lifeline, Call Completion, Basic Service, Speech Generating Devices, and in many other CPUC proceedings without you. Thanks for your contributions as a member of the National Association of Regulatory Utility Commissioners (NARUC) staff subcommittee, and for your support for my service as Co-Vice-Chair of the NARUC Telecommunications Committee.

To Jamie Ormond my Water and Legal Advisor who is always willing to pitch in as she did today, I thank you. Jamie was my law student in my Contracts class at Santa Clara University. I have learned so much from you and have a professor's pride in watching you grow as a lawyer, analyst, and advisor. We would not have been able to author the Interconnection Alternate Decision without you and the team from the Energy Division you organized. I appreciate your partnership in the water/energy nexus proceedings and water proceedings. You have taken up the mantle of combatting the drought and working to make water service reliable, safe, and sustainable. I have learned from you about the energy side of the energy/communications nexus. The effect of our collaboration is evident in the water/energy nexus Decision we adopted today which notes that Distributed Energy Resources "cannot become grid-connected, be monitored or controlled, or serve as a transactive asset without communications facilities to reliability transmit two-way high speed data." Thanks for your work, insights, leadership on Smart Inverters that will enable DERS to provide grid management services, and your enthusiasm for this work.

To Michael Colvin, my Safety and Energy Advisor, your counsel has been wise, your knowledge of the Commission is deep, your ability to act is swift and you have always brought great cheer and tremendous initiative. I appreciate your willingness to pitch in and pinch hit. You were a key asset in developing the Matinee Pricing pilot Decision, a key resource for the Interconnection Decision, and a critical safety and energy advisor. I thank you Michael, Judge Colbert, Energy Division, my Commissioner colleagues and their advisors, and the parties and the public for their work that led to the unanimous approval of the CARE/ESA Alternate Decision in November 2016. CARE/ESA is a momentous decision that will benefit low-income households, all ratepayers, and the electric grid. I look forward to seeing the fruits of our work in CARE/ESA and thank you for your support.

Thanks to my former advisors Amy Baker, Allison Brown, Jessica Hecht, Colette Kersten, Melissa Slawson, Steve St. Marie, Lindsey Brown, Chris Witteman, and Phil Weismehl. I would like to thank who

my assistants Lolita Hajian and Anna Maria-Madrigal. Thanks to thank my former assistants Valerie Malliett, Jovita Chan, Ann-Christina Rothchild, and Jackie Clay. I have learned so much from each of you and appreciate your expertise, insights, and dedication to the mission of the CPUC. Your work informed my analysis, enabled us to engage with the public in new ways, and broke new ground through the decisions we authored and approved.

Thank you, President Picker, for pushing the Commission to adopt a strategic plan, a vision, and mission statement. Thanks for establishing the Commissioner Committees which gave us a new forum to discuss Commission practice. The development and articulation of the CPUC's Core Values of Integrity and Excellence are captured in the posters outside the auditorium and around the Commission. The core values are: Accountability, Excellence, Integrity, Open Communication, and Stewardship. It is wonderful to see the CPUC's values posted, embraced, and personified in our staff, Commissioners, and work.

President Picker, on day one of your term as a Commissioner you embraced the title of Safety Commissioner and printed cards asking people to call you about safety issues. I appreciate your stand for safety as indicated in your support for the Call Completion Decision which will provide data for this Commission to carry out its duties to ensure that service is safe and reliable, and that 9-1-1 is accessible. That Decision will provide valuable and timely information to emergency services offices, charged by California state law with the duty to respond to local, county, regional, or state-level emergencies. In the past two years several counties activated their emergency operation center because a communications outage created an emergency. Thanks for your leadership in convening a pole safety *en banc*, and to all of the Commissioners for your support for the resolution to improve infrastructure and safety by authorizing CPUC staff to issue citations to communications providers for violations of the CPUC's pole and underground line safety rules. This action builds on the attention to pole safety and network issues developed in the Verizon-Frontier transfer proceeding for which I was the Assigned Commissioner, and the information gathered in the Call Completion proceeding about the role of maintenance in outages.

President Picker, you have encouraged us to partner more with local government and state government. I was so pleased when I talked to you about Call Completion as my Bagley-Keene partner and learned of your plans to work with local public safety officials to visit communities that have 9-1-1 issues as identified in the data requests the CPUC will issue. Those communities and our state will benefit from your visits, engagement with local leadership, and work to resolve infrastructure challenges. I encourage local tours such as the one you and the Policy and Planning Division arranged when we visited the site of the Malibu fires sparked by a downed pole and lashing wire. I learned so much from the tours we arranged for the Verizon-Frontier, High Cost A-Fund, Call Completion, Sacramento Natural Gas, Catalina Island water, and other proceedings. Regulating by walking around is a powerful gateway to understanding.

To Commissioner Peterman I have learned so much from you. I appreciate your ideas, your deep engagement, your analysis, and your friendship. I laud your leadership in storage, electric vehicles, and so many fields. Asthma is the number one cause of absenteeism in the Los Angeles Unified School District, and living near freeways is a key predictor for asthma. The Decisions we've adopted to promote

deployment of electric vehicle charging stations will help transform our freeways, our communities, our environment, and our health. These Decisions will improve the health of children who live near freeways such as my family did in the center of the East Los Angeles interchange. It was my pleasure to vote to increase storage procurement targets called for in the Decision you authored, and storage has since flourished in California. The Interconnection Decision I authored this summer pioneers mechanisms to speed the connection of storage to the electric grid, enabling storage to provide energy when needed such as when distributed renewables are no longer generating. I appreciate your leadership in the Telecom Sector as demonstrated in your work in the Competition OII we adopted this month. I also appreciate your suggestions, edits, and receptiveness to ideas and suggestions, and your support as my BK partner for the Water/Energy Nexus Matinee Pricing Pilot Decision.

To Commissioner Randolph, you have been my partner on so many things. We were Bagley-Keene partners in the San Bruno case, and we all worked together as a Commission through the Ratesetting Deliberative Meeting process to develop a penalty for the failures that led to the tragedy in San Bruno, and to create incentives to invest in safety. We have the privilege of being BK partners in the Monterey Peninsula Water Supply Project application. Thanks to the Commissioners for unanimous approval of the Pure Water Monterey recycled water purchase agreement and pipeline to bring that water to Monterey. This project is the first significant new source of water in Monterey in many, many years. The State Water Resources Control Board approved the request for an extension on the cease and desist order for withdrawals from the Carmel River by the local Water IOU, citing our work to increase conservation, the progress of the CPUC proceeding, and the recycled water project. The Decision I authored in 2012 that led to the removal of the Carmel River Dam was also cited as a key factor in extending the cease and desist order compliance deadline. Both the fish and river are now flowing in the Carmel River, thanks to the actions of this Commission, the parties, the public, and many other partners who worked to restore the health of the Carmel River.

Colleagues, I have here volumes 1-3 of the Environmental Impact Report of the Monterey Desal application. The CPUC is working closely with the National Oceanic and Atmospheric Administration on volume 4 of the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) analysis. We plan to issue in January a joint state-federal draft environmental review document, EIR/EIS, for the environmental review of the water desalination plant application. Thanks Commissioner Randolph and to your advisors for coming to Monterey in September for the Workshop and PPH we held in this proceeding. We have a great team at the CPUC working on this project and the review of the comments on the EIR/EIS, and the Certificate of Public Convenience and Necessity Application for the Water Desalination plant proposal in Monterey.

Commissioner Florio, thanks for your tremendous work on this Commission, for your deep knowledge of the energy field, and your commitment to equity and service as demonstrated in your leadership in telecommunications and energy. I appreciated your leadership in the Sacramento Natural Gas Storage case and the Alternate you authored with Commissioner Ferron to deny the application to store natural gas below hundreds of homes in south Sacramento. Thanks to your Chief of Staff, Sepideh Khosrowjah, for attending the tour of the neighborhood under which gas was proposed to be stored, and the Public Participation Hearing we held in Sacramento. It was important to see both the proposed project site at

the well-head, and to visit and understand the potential impacts on the people affected by the project. The Environmental Impact Report said the project proposed an unmitigable risk of asphyxiation or death if gas were to leak from the underground storage areas and travel into the homes above. I joined you and Commissioner Ferron in voting against that project. As you mentioned earlier today, the gas leak at the Aliso Canyon natural gas storage field underscored that it was the right decision to reject this proposal to open a storage field under homes.

I also appreciate your stand for safe and reliable telephone service in the Basic Service Alternate you and Commissioner Ferron authored. I voted with you to ensure that our basic service standards require telephone service that works inside the dwelling so people can call 9-1-1, call loved ones, or make work calls from inside their home. Thank you Commissioner Florio for your leadership, your deep knowledge, your insightful analysis, your big laugh, and great heart.

Thanks to the past CPUC Commissioners with whom we worked. Thanks to the CPUC Staff, and to the Divisions: Administrative Services Division, Administrative Law Judge Division, Communications Division, Consumer Protection and Enforcement Division, Energy Division, Executive Division, Legal Division, Policy and Planning Division, Safety & Enforcement Division, and Water Division. Thanks to each and every person at the Commission. We also appreciate the professionalism of those who practice before the Commission, and your commitment to excellence. Thanks to the chambers of commerce, non-profit and public interest organizations, associations, businesses, academics, governmental bodies, and members of the public who participate in CPUC proceedings.

I'd also like to thank the National Association of Regulatory Utility Commissioners (NARUC). Through NARUC we've learned so much from our colleagues around the country. I appreciated the opportunity to be the Co-Vice-Chair of the NARUC Telecom Committee. Thanks to the Federal Communications Commission for appointing me to serve on the Federal-State Joint Conference on Advanced Services.

As I return full-time to my work as a law professor at Santa Clara University, our work at the CPUC has given me a thousand ideas for research projects, and a thousand topics for student papers. Next semester I resume teaching Contracts, and in the fall will also teach Communications and Antitrust Law, and am planning a seminar on the water/energy/communications nexus.

In closing, my service and our work on the CPUC has been a tremendous privilege and honor. The work of this Commission has both informed my knowledge, and deeply touched my heart. Thank you for the opportunity to work with all of you, and for this opportunity to make a difference for the people of California. I look forward to the work you will continue to do for California and our nation.